GENERAL NOTES

RED BAT AND SPOTTED PORPOISE OFF THE CAROLINAS

Fragmentary observations at sea are frequently worth recording for want of more complete data. September 3, 1919, the writer was bound south on the coastwise steamer "Arapahoe." We rounded Diamond Light-ship, North Carolina, in the early afternoon. About an hour after sunrise, approaching the Capes of the Carolinas from the North, no land yet in view, a red bat (*Lasiurus borealis*) was observed darting about ship in erratic fashion, looking for cover. It settled between two booms at the break of the forecastle, but was promptly driven out. Later in the day a bat was seen once or twice about ship, probably the same individual. The preceding afternoon, standing to sea from New York, there had been calms and light airs, the weather more or less thick, with a dull grey sky. September 3 was clear, with a north-west breeze, rather light. This bat, doubtless a migrating individual, could then not have been driven off-shore by heavy weather. It was likely following its regular migration route southward, across the water.

In the afternoon, having passed well south of Diamond Light-ship, a number (perhaps 35) of spotted porpoises (*Prodelphinus plagiodon*) were observed. As many as ten or a dozen occurred together; jumping clear of the water, low; and also "rolling." Some came close along-side where one could see them swimming under the clear water, or lolling there, before they broke. They appeared very dark above with pale bellies. Nearby the purplish cast and the spotting were conspicuous. In one case one was accompanied by a smaller grey porpoise swimming close beside it, which looked like *Delphinus*.

—*J. T. Nichols.*

New York City.

THE COYOTE NOT AFRAID OF WATER

My theories regarding the aversion to water shown by the coyote were upset recently while on a trip to the Imperial Valley, in the desert region of southeastern California. A visit was made to Salton Sea, a large alkaline lake, and to some islands on the western shore, where numerous colonies of pelicans and cormorants are to be found each spring. The islands are really sand dunes which do not rise more than ten or fifteen feet above the surface of the sea. Each island is separated from its neighbor by a narrow channel of water which may be shallow enough to wade, or it may be eight or ten feet deep. On one island I was greatly astonished to find the fresh tracks of a coyote (*Canis ochropus estor* Merriam), so situated as to indicate that the animal had swum a channel about 30 feet wide and 8 feet deep. The tracks showed plainly where it had come down at one side of the channel, had entered the water, crossed to another island, made the circuit of that island, and then returned across the strip of water. Water from the shaggy coat had run down the legs into the footprints and there was evidence also that the animal had shaken itself. Upon following the tracks, I discovered that it had feasted upon two mudhens, the remains of which it had buried after the flesh had been picked clean from the bones. This particular island was separated from another one by a channel about 2 feet in depth and 22

feet in width. Here again the tracks showed unmistakably how the animal had entered the water and come out on the other side.

It therefore appears that narrow channels of water formed no barrier during the food-getting expeditions of this particular coyote, and it may be that much of the depredations on ducks' nests which have been attributed to racoons because of their fondness for water may in reality be due to coyotes, who may not be so averse to swimming as some persons have believed.

—*Harold C. Bryant.*

THE FLORIDA SPOTTED SKUNK AS AN ACROBAT

April 13, 1919, while engaged in field work for the Biological Survey in Lee County, Florida, I established camp on a small prairie dotted with clumps of palmetto scrub close to an arm of the "Big Cypress" known as Kissimmee Billy Strand—being approximately 25 miles southeast of Immokalee. Shortly before sunset, as I was walking along a cow trail close to a palmetto thicket a Florida spotted skunk (*Spilogale ambarvalis*) suddenly appeared in the trail, not over 10 or 12 feet in front of me, standing *erect on his fore legs*, with his hind legs spread in a most threatening attitude. I did not see him assume this position, and he maintained it only for an instant, quickly resuming his normal position and disappearing in the brush, leaving only a slight odor behind. Apparently he, as well as I, had been taken by surprise, but just what his purpose was in striking this ludicrous attitude I am unable to say. My guide, Mr. J. M. Youmans, who has hunted extensively in this region, told me he has occasionally seen a similar performance by this skunk. A trap set in the scrub resulted in capturing the little acrobat next morning.

This species is essentially a prairie dweller and was found to be common over a large part of Lee County, probably reaching its southern limit not far from the locality mentioned above. On a previous trip I captured a specimen at Arcadia in the mouth of a pocket gopher's burrow after he had entirely devoured a trapped gopher (*Geomys tuza*). I learned also of the occurrence of the species at Palma Sola, on the Gulf coast of Manatee County. On the east coast, the species ranges south (rarely) to Lemon City and Cocoanut Grove.

—*Arthur H. Howell.*

THE FELIS OCELOT OF HAMILTON SMITH

In his important paper on the nomenclature of the small spotted cats of tropical America (Bull. Amer. Mus. Nat. Hist., vol. 41, pp. 341–419, Oct. 3, 1919), Dr. J. A. Allen has concluded after extensive discussion that if *Felis ocelot* H. Smith "is taken seriously it can only be construed as a synonym of *Felis pardalis* Linné." Should there be any doubt as to the correctness of this opinion, it may be noted that Smith's name is preoccupied by *Felis ocelot* Link, 1795 (Beytr. Zool., 2, p. 90), which is an undoubted synonym of *Felis pardalis* Linnæus.

Hamilton Smith described four varieties of his *Felis ocelot*, respectively numbered 1, 2, 3, and 4. Of these, No. 4 was identified with *Felis pardalis* Linnæus by Griffith in 1827 and has not been named subsequently; No. 1 was named *Felis chibigouazou* also by Griffith in 1827; No. 2 was called *Felis hamiltoni*, and no. 3

Felis griffithii, both by Fischer in 1830. Variety No. 2 was renamed *smithii* and No. 3 *canescens* by Swainson in 1838 (Anim. in Menag., pp. 120–121). Smith expressed the opinion, unsupported by any direct evidence, that Nos. 1 and 2 were South American and Nos. 3 and 4 Mexican. The names based on them have been allocated largely on the strength of this statement as to localities for the descriptions and figures offer little in the determination of forms known to be variable and at best only subspecifically separable. Thus Allen has regarded the two names based on Nos. 1 and 2 as South American and synonymous, recognizing *chibigouazou*, the earlier one, and placing *hamiltoni* as a synonym of it. In dealing with the Mexican ones, however, he has recognized two forms (*griffithii* and *pardalis*) representing Smith's Nos. 3 and 4. In this he was doubtless influenced by the grayish color ascribed to Smith's specimen of No. 3. In view of the great variability in the group, as fully noted by Allen, and in consideration of the nature of the case, which is not one of distinct species but of intergrading subspecies of which even actual specimens may be difficult to determine, it would seem desirable to place *griffithii* as a synonym of *pardalis* on much the same grounds that *hamiltoni* is placed under *chibigouazou*. By so doing, *albescens*, which is already well established for the form of northeastern Mexico and the south-central United States, would be retained.

Even the recognition of *chibigouazou* seems open to question, for at least two earlier names of possible pertinency are to be considered. These are *Felis maraqua* Link, 1795 (Beytr. Zool., 2, p. 91) and *Lynx brasiliensis* Oken, 1816 (Lehrb. Naturg., Zool., 3, p. 1050). The first is described as follows: "*F. maraqua*, cauda elongata, corpore luteo, dorso nigro striato, lateribus nigro-maculatis." The word *maraqua*, used by Link as a specific name, seems to be a variant of one of the Brazilian names for cats of the *pardalis* group; therefore, it carries the implication that the description was derived from some previous account of one of these animals. However, the source of the name is not indicated otherwise and the description itself is so brief and so generalized that it might apply to any of several species. Like many other names, it is not wholly unidentifiable, for at least it refers to a South American spotted cat. It may therefore, be synonymized with any definitely identifiable earlier name for such a cat, as for example, *Felis tigrina* Schreber, 1777. To attempt to establish it in use would only be justified in case it was the earliest name applied to any cat having the characters mentioned.

Turning to Oken's name *Lynx brasiliensis*, we find a description of considerable detail with measurements and association with the native name *mbaracaya*. Although the source of this native name is not cited by Oken, the large use which he has made of Azara's work on the quadrupeds of Paraguay in other cases makes it probable that the name was obtained from that work. The probability is greatly strengthened by comparison of Oken's description and Azara's text which show numerous points of similarity. There is nothing in Oken's description which cannot be found in Azara except the measurement of total length, given as 22 inches, an obvious error, probably a misprint for 42 inches, the dimension given by Azara. The tail length of 13 inches is given by both authors. The evidence is thus convincing that Oken's *brasiliensis* was based on Azara, who states definitely (Quad. Paraguay, 1, p. 152, 1801) that the *mbaracaya* is the same as the *chibigouazou*. Hence the technical name *chibigouazou* should be supplanted by *brasiliensis*.

From the foregoing, therefore, it is concluded (1) that *Felis ocelot* Smith is preoccupied and wholly untenable, (2) that *Felis griffithii* Fischer is a synonym of *Felis pardalis* Linnaeus, (3) that *Felis maraqua* Link is not fully identifiable and may be disposed as a possible synonym of *Felis tigrina* Schreber, and (4) that *Felis chibigouazou* Griffith is a synonym of *Lynx brasiliensis* Oken which becomes *Felis* (*Leopardus*) *pardalis brasiliensis*, the first tenable name for a South American cat of the *pardalis* group. Thus not only the troublesome *Felis ocelot* goes out of use, but also all the names based on the so-called varieties associated with it by Hamilton Smith. —*Wilfred H. Osgood.*

NOTE ON GUELDENSTAEDT'S NAMES OF CERTAIN SPECIES OF FELIDÆ

Recent investigations of the African Felidæ have led me to the consideration of the nomenclature of the *caracal* group, and especially to the alleged "*Felis caracal* Gueldenstaedt."[1] Although Gueldenstaedt's names were given correct binomial form by nearly all subsequent authors they are not binomial in Gueldenstaedt's text. The first author known to me to have challenged their acceptance is Matschie, in a paper on the caracals published in 1912,[2] in which he states that Gueldenstaedt's names cannot be accepted because they are none of them binomial. To demonstrate the correctness of Matschie's claim it is only necessary to quote Gueldenstaedt's diagnoses, which run as follows:

"Lynx: Felis auriculis apice barbatis; capite et corpore albido-ruffo, nigro maculato; cauda obsolete annulata, apice nigra;

"Felis ruffa: Felis auriculis apice barbatis; capite ruffo, fronte et temporibus nigro striatus; corpore ruffo, fusco maculato; cauda subtus et apice alba, supra nigro fasciata;

"Caracal: Felis auriculis apice barbatis, extus nigris; capite, corpore et cauda unicoloribus fuscentibrunneis;

"Chaus: Felis auriculis apice nigro barbatis, extus brunneis; capite, corpore et caudæ basi unicoloribus, fuscenti-luteis; cauda apicem versus albido et nigro annulata, ipso apice nigro."

The second of these species, "Felis ruffa," has the appearance of being binomially named, but a reference to the preceding context on the same page (page 499, second paragraph[3]) is sufficient to show that this is, as well as "Lynx," "Caracal," and "Chaus," a vernacular name, not a technical one, it being simply the rufous cat; in other words, the "Bay cat" of Pennant translated into Latin, the language in which Gueldenstaedt's paper is written.[4] In other parts of his

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[1] Chaus, animal deli affine descriptum. Auctore A. I. Gueldenstaedt. Novi Comm. Acad. sci. imp. Petropolitanæ, XX (for 1775), 1776, pp. 483–500, pls. xiv, xv, animal and skull of the Chaus. Diagnoses of four species, pp. 499–500.

[2] Über einige Rassen des Steppenluchses *Felis* (*Caracal*) *caracal* (St. Müller). Von Paul Matschie. Sitzungsb. Ges. naturf. Freunde Berlin, 1912, pp. 55–67. Comment on Gueldenstaedt's names, pp. 56–57.

[3] "A Fele ruffa facile distinguitur," etc.

[4] "Addidit nuper Zoologus his acutissimus (vid. sp. 136. in Synops. of Quadrup.) animal americanum Lynci proximum, quod illi Felis ruffa (bay cat) dicitur. Addamus nunc alterum animal asiaticum Caracali adeo cognatum, ac Felis ruffa Lynci, quod á nobis Chaus appelator." (Op. cit., p. 484.)

memoir Felis ruffa is also unmistakably used as a vernacular name in the same way as lynx, caracal, and chaus. In the summary of this paper (op. cit., p. 62) these cats are enumerated as "Lyncis Auctorum, Felis ruffæ Pennanti, Caracalis Buffonii et Chai nostri." Gueldenstaedt's Lynx is the *Felis lynx* Linné; his Felis ruffa is the Bay Cat of Pennant, the "*Felis rufa* Gueldenstaedt" as rendered by Schreber; his Caracal is primarily the Caracal of Buffon; his Chaus is the "*Felis chaus* Gueldenstaedt," as rendered by Schreber. Schreber, in Theil III of his Säugthiere, in the part issued in 1777, is the first author to misquote Gueldenstaedt's vernacular names, thus giving them the form and status of properly constructed binomial technical names, and they have been accepted as such by subsequent authors who have apparently, almost without exception, taken them from Schreber without verification. It thus happens that the North American bay lynx still carries in our latest publications the technical designation *Lynx ruffus* (Gueldenstaedt), although the correct authority for the name is Schreber, who first gave it form, changing the specific name *ruffa* to *rufa*. The name of the bay lynx should therefore be *Lynx rufa* Schreber.

As of bibliographic interest, it may be mentioned that Gueldenstaedt's paper is not cited by Erxleben in his "Systema Regni Animalis," published early in 1777. —*J. A. Allen.*

THE WOOD RAT AS A COLLECTOR

It is of course well known that wood rats of the genus *Neotoma* carry away and put in their nest piles almost any trinket or small article which they find. Doctor Mearns records the fact that the white-throated wood rats of southern Arizona (*Neotoma albigula*) gather together sticks, stones, cow-dung, bones, bits of glass, plants, seed-pods, and similar materials, and on one occasion, when he was spending the night of April 19–20, 1888, in a cabin in Bloody Basin, Arizona, they carried off some boxes of pills. Hen's eggs, powder boxes, candles, cakes of soap, potatoes, Indian corn, seeds of various wild plants, juniper berries, and joints of cactus were some of the materials found in their stores. (Mammals of the Mexican Boundary, Bull. 56, U. S. Nat. Mus., 1907, pp. 477–480.)

Through the courtesy of Miss Crissie Cameron of Tacoma, Washington, a member of the Committee on Biological Survey Coöperation of the Mountaineers Club, we have been favored with the following notes on the collecting activities of an individual western bushy-tailed wood rat (*Neotoma cinerea occidentalis*). This animal had its nest in a box on some rafters in the girls' dormitory of the Mountaineers' lodge near Snoqualmie Pass, in the Cascade Mountains in Washington. A bushel of articles had been gathered by the industrious rats. "The nest was made of oakum pulled from the chinks in the cabin and lined with what appeared to be wool or cotton pulled from a comforter. The nest measured 6 inches in diameter on the inside and 8 inches on the outside."

The nest and box contained the following articles:

rags, chewed up	apple core
leaves and grass, considerable quantity	onion peel
paper, chewed up	bacon rind
thumb of glove	raisins
string, pieces	chocolate, 10 bars
thongs	figs

oakum
puff balls
coin, one dime
newspaper clipping on prevention of forest fires
coffee can cover 4 inches in diameter
paraffin from jelly glass
bread crusts
bones
meat scraps
cantaloupe rind
scone
candles, 19 pieces
potatoes, 4
dried apricots
soap, several cakes
lemons
mushrooms
beans
peanuts
banana
sugar, 15 lumps

Miss Cameron writes that the box containing the nest was removed, and a home-made box trap put in its place, but that the wood rat avoided the spring, and industriously set about collecting a quantity of materials for another home.

—*Walter P. Taylor.*

A NOVEL NESTING PLACE OF THE RED-BACKED MOUSE

On September 7, 1919, in Sunset Park, Mount Rainier, Washington, I stowed a dunnage bag containing clothes and miscellaneous articles beneath a thick conifer to keep off the wet. Two days later I had occasion to get into it. Reaching inside, I felt something clinging to my hand, and looking down, I was surprised to see a mother red-backed mouse (*Evotomys gapperi saturatus*) with one young one clinging to one of her teats, and another but just let loose. On investigating further two more young were found. The mother had evidently regarded my dunnage bag as an exceptionally dry log with a wonderfully cosy interior, and had given birth to her four young there. It is of interest that we found red-backed mice breeding in Mount Rainier National Park from early in July until the middle of September. —*Walter P. Taylor.*

THE RANGE OF THE HOARY MARMOT IN MONTANA

The Montana hoary marmot (*Marmota caligata nivaria*), according to Howell, occurs in two comparatively small areas, one in northwestern Montana, covering approximately what is now the Glacier National Park, and the other in Idaho, in portions of the Bitterroot and Salmon River Mountains (North American Fauna, No. 37. Revision of the American Marmots, pp. 66 and 67). I find that I have a few observations, made in Montana several years ago, that increase this range somewhat. While I paid no great attention to mammals at that time, and did not collect specimens, such an animal as the hoary marmot is so conspicuous, so easily observed and so unmistakable that there can hardly be doubt as to the species, though the subspecies, of course, might be in question.

On September 8, 1909, while crossing the continental divide at a point in Deer Lodge County, Montana, I observed two of these animals, and heard their shrill whistled call. I was in the company of Mr. J. S. Baird of the Forest Service at the time. Neither of us had ever seen such an animal before, or heard of one. When we described it to rangers of the Deerlodge National Forest, none of them knew it, which leads me to believe that it cannot be common in that part of the

state. The point where the animals were seen was at the head of Ten-mile Creek, a tributary of the Big Hole River, just south of the continental divide, which in this part of the state runs east and west. This locality is probably an eastward extension of the Idaho area of the range of this species, for almost continuous high mountains extend from this point west to the Bitterroot Mountains.

Nearly two years later, in the summer of 1911, I again saw this animal, and in this and the next summer became fairly familiar with it. The locality this time was in the mountains of Teton County, Montana, just south of the Glacier National Park. Here in the headwaters of Birch Creek, and the Teton and Sun Rivers the marmot was found in small numbers, though by no means as commonly as in the Glacier Park. The southernmost point at which I observed it here was at the head of Indian Creek, a tributary of the West Fork of the Sun River, in northern Lewis and Clark County. Some of the forest rangers in this vicinity reported them on the head of the Dearborn River, which is still somewhat farther south. This area is obviously an extension southward of the more northern area of the range of this species, though the two areas are separated by a gap of a few miles just south of the Glacier Park, where there are no high mountains.

It is not probable that the southern and northern areas of the range of this species are connected along the continental divide, for the mountains between the head of the Dearborn River, and those of Deer Lodge County are mostly low in elevation, with only a few small areas that extend above the Canadian zone.

—*Aretas A. Saunders.*

RODENT MOUNTAINEERS

In the course of investigations by the Biological Survey party on Mount Rainier during the summer season of 1919 several rumors were heard of mammals observed on the summit of the mountain. These were uniformly questioned by us until finally a white-footed mouse (*Peromyscus maniculatus oreas*) was actually secured. It was forwarded to the Honorable Roger W. Toll, superintendent of Mount Rainier National Park, who skinned and saved the specimen. An affidavit accompanying the skin certifies to the fact that the mouse was found and killed August 8, 1919, at Register Rock, one of the high points on the mountain, 14,100 to 14,200 feet altitude. The affidavit is signed by two guides and four climbers, all members of the summit party.

At a later date Mr. and Mrs. William L. Finley of Portland, Oregon, made the ascent of Mount Rainier and saw a little chipmunk (*Eutamias amœnus* subsp.) on the summit.

On August 6 a climbing party of the Mountaineers and the writer observed a Douglas squirrel (*Sciurus douglasii*) playing about in the rocks apparently very much at home no less than 2500 feet above timberline at Camp Curtis on the north side of the mountain. Later in the day one squirrel was seen and another heard at the summit of Steamboat Prow, 9700 feet high; and on the following day, in company with a party of the Mountaineers, en route to the summit of Mount Rainier via Emmons Glacier, the writer saw a Douglas squirrel at an altitude of approximately 10,500 feet. This squirrel was on the snowy surface

of the glacier, far from any rocks or earth. He was tripping downhill as if he had just been to the summit and was enjoying the experience hugely.

At Camp Muir, 10,000 feet, on September 26, the writer caught white-footed mice (*Peromyscus maniculatus oreas*), western bushy-tailed wood rats (*Neotoma cinerea occidentalis*) and the large-footed meadow mouse (*Microtus richardsoni arvicoloides*).

The occurrence of the large-footed meadow mouse at Camp Muir is perhaps the most striking record of all. Ordinarily dwelling in moist alpine parks and meadows at an average altitude of 5500 feet, this animal has here climbed to a height of 10,000 feet, or approximately 3500 feet above the tree line. Instead of pleasant meadow country with an abundance of water and herbaceous vegetation, the mouse here encounters rocks, furious winds, snow and ice, and has only lichens and a very few hardy plants on which to feed. The mouse was captured under the wall of a stone cabin. That he was hard pressed for food may be indicated by the fact that his stomach contained a piece of an old woolen sock.

The altitudes attained by the mammals on Mount Rainier are not so remarkable in themselves, for it is well known that several mammals attain the summit of Mount Whitney, California, 14,504 feet, the highest point in the United States south of Alaska. The chief interest is in the fact that while timberline on Mount Whitney averages perhaps 11,500 or 12,000 feet in altitude, the trees on Mount Rainier stop at an average altitude of 6500 feet. Thus the mammals seen on the summit of Rainier had climbed between 7000 and 8000 feet above timberline.

—*Walter P. Taylor.*

DOES THE CUTEREBRA EVER EMASCULATE ITS HOST?

In the early 50's, Dr. Asa Fitch, State Entomologist of New York, was frequently informed by the hunters in the vicinity of Lakeville, New York, that at least one-half of the male squirrels of all the species found in the country were castrated. Some thought that jealous rivals of the same species did it, and some blamed the redsquirrels for all this maiming.

In August 13, 1856, Doctor Fitch had sent him a chipmunk in whose scrotum was a bot-fly grub. He says (N. Y. State Entom. 3rd Ann. Rept., 1857, Supp., p. 479): "I find the fleshy glandular tissue of the testicles wholly consumed, nothing of them remaining but their empty outer skin. . . . . There are some hunters, however, that say they have found two grubs in the scrotum of some Squirrels, and they conjecture that it is by these that the testicles are destroyed." . . . . "From what has now been stated I think that everyone will agree with me in the opinion, that it is by this fly that the Squirrels in our country are emasculated" (p. 482).

In 1889 Dr. C. Hart Merriam contributed to "Insect Life," vol. 1, p. 215 (U. S. Dep. Agr.) a paper containing the following facts: He had frequently found the *cuterebra* in or near the scrotum of the graysquirrel, the redsquirrel, and chipmunk. On the 7th and 8th of October, 1885, he killed more than 50 chipmunks at the south end of Lake Champlain and found fully one-half infected with *cuterebra*. More females than males were thus afflicted. The "warbles" were anywhere from the umbilical region to the genitals; in a few cases they were in the axilla, and in one or two in the upper part of the foreleg; a number had 2, some had 3 of the bots.

Doctor Fitch, and most of those who have followed after him, have assured us that the bot emasculates the host. *Does it?* The evidence is far from convincing.

1. We have proof that a bot develops under the skin of all of our squirrels; that it often appears in the scrotum of the male; but is as often found in other parts of the body, and in the female as much as in the male.

2. No trace of the testes is discernible after the development of the grub. Why should there be? For at the season of all observations—August, September, and October—the testes are normally reduced to almost nothing and are even, as Bachman says (Vol. 1, p. 269), "drawn into the pelvis."

3. There is no proof that the bot eats fibrous tissue, or anything but juices.

4. It is contrary to the known ways of evolution; that any species should develop a habit that would tend to cut off its own food supply.

5. The final proof has never yet been offered, namely—a male, apparently emasculated by the grub, kept over till next rutting season for observation. I strongly suspect that such males would surprise us by appearing on time, fully equipped, with two perfectly good, functioning testicles, that had been safely tucked away in their original nest inside the pelvis; evidencing that the only harm the bot-fly warble did, was the temporary drain while the host was carrying it. No one yet has reported one of these squirrels taken in the rutting season of its species, and obviously castrated.

A friend of mine, who had the ill-luck to develop a bot-warble in the calf of his leg, tells me that at times, when the creature was turning over, or in some way moving, the irritation was maddening.

The following species are known to be infected by the bot-fly or warble: gray-squirrel, foxsquirrel, redsquirrel, Eastern chipmunk, striped groundsquirrel, Richardson groundsquirrel, Franklin groundsquirrel, least vole, housemouse, jack-rabbit, etc.

Perhaps some reader has made observations that will decide this question.

—*Ernest Thompson Seton.*

THE FLYING SQUIRREL AS A BIRD KILLER

On April 6, 1914, an adult female flying squirrel (*Glaucomys volans*) was captured with her two young and placed in a roomy cage in the workshop with a section of tree trunk containing a flicker's hole as a nest. Two or three days later a fine male yellow-bellied sapsucker was captured unhurt, and placed in the same cage where he made himself at home on the stump. I was greatly surprised the next morning to find his bones on the bottom of the cage, picked clean. This strong, hardy woodpecker in perfect health had been killed and eaten during the few hours of darkness, by the old mother flying squirrel, though she had other food in abundance. While pondering the tragedy visions of the many holes in the woods that had been found containing feathers and other remains of small birds came to mind, and I wondered if the beautiful and apparently inoffensive flying squirrels were responsible.

Small birds frequently take refuge in old woodpecker holes and natural cavities, where they are at the mercy of such a nocturnal wanderer. I am aware that flying squirrels have been accused of eating birds' eggs and young birds,

and while I have no positive proof that they prey on adult birds in a wild state, I have my suspicions; perhaps others have more conclusive evidence.

My friend, Mr. L. L. Pray, tells me that four flying squirrels in his possession ate prodigious quantities of "pinch bugs," and other beetles, as much as a pint a meal. The wings and legs were cut off, and the bodies eaten. They also displayed a fondness for raw meat, as do the equally mild appearing white footed mice.

—*H. L. Stoddard.*

N. W. Harris Public School Extension of Field Museum, Chicago, Illinois.

THE TECHNICAL NAMES OF TWO COLOBUS MONKEYS

Pennant, in his 'History of Quadrupeds' published in 1781, described two species of four-fingered African monkeys, based on specimens in the Leverian Museum, "brought over by Mr. Smeathman" from "Sierre Leone." The first of these he described and figured (l. c., p. 197, no. 110, pl. xxiv), as the "Full-bottom Monkey," in allusion to the "long, coarse, flowing hairs" of the head and shoulders, "like a full-bottomed periwig." His plate was poorly copied by Schreber, and published as Plate XD, legended as "*Simia Polycomos* Zimmerm." but, as shown below, the plate could not have been issued till after the year 1780,[1] when Zimmermann in his 'Geographische Geschichte des Menschen und der vierfussigen Thiere' (II, 1780, p. 202, no. 105) described his "Der vierfingerige Peruquen-Affe," which he named "*Cebus Polykomos*," based exclusively on the "Full-bottom Monkey" of Pennant,[2] evidently from manuscript notes sent to him by Pennant before the publication of the 'History of Quadrupeds.'[3] The publication of Zimmermann's name and description of the species thus antedates Pennant's by one year.[4] This is the earliest technical designation for this species, usually cited as "*Simia polycomos* Schreber, 1775," the current modern equivalent being "*Colobus polycomus* (Schreber)."

The second of Pennant's two species of monkey here under consideration is his "Bay Monkey" (l. c., p. 198, no. 111), which he says likewise came from Sierra Leone and was based on Mr. Smeatham's specimens in the Leverian

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[1] Sherborn (Proc. Zool. Soc. London, 1891, p. 590) gives the date of publication as probably about 1800.

[2] Zimmermann, in the third volume of his 'Geographische Geschichte' (1783, p. 170), in his list of African mammals, gave it as "Der vierfingerige afrikanische Affe, *Cercopith. Polykomos*."

[3] Zimmermann thus acknowledges (l c., p. 202) Pennant's favor: "Herr Pennant hat diese neue Affenart, die er in den vortreflichen Kabinette des Herrn Leevers (das reichste an Quadrupeden und Vögeln in Europe) fand, zuerst beschrieben." His citation of Pennant's work is "Full-bottom Monkey. Pennant History of Quadrupeds," without a reference to the page, which he always gives in citing Pennant's earlier 'Synopsis of Quadrupeds.'

[4] Attention was first called in 1902 to the tenability of Zimmermann's name in my paper on "Zimmermann's 'Zoologiæ Geographicæ' and 'Geographische Geschichte' considered in their relation to Mammalian Nomenclature" (Bull. Amer. Mus. Nat. Hist., xvi, 1902, p. 22).

Museum. He did not, however, give a figure of it. This species was technically named by Kerr in 1792 (Anim. Kingd., p. 74, no. 62) *Simia* (*Cercopithecus*) *badius*. Eight years later it was renamed by Shaw (Gen. Zool., i, pt. 1, 1800, p. 59) *Simia ferruginea*, this name being exclusively based on the "Bay Monkey" of Pennant. In 1812 E. Geoffroy (Ann. Mus. d'Hist. nat. Paris, xix, p. 92), emended Shaw's specific designation to *Colobus ferruginosus*, citing Shaw's *Simia ferruginea* as a synonym.[5]

Pennant's "Full-bottom Monkey" and his "Bay Monkey" were thus the base of the first two species of *Colobus* to receive formal technical designations, and were described from specimens from a known geographic source. Furthermore they were the only species originally referred by Illiger to his genus *Colobus* as, respectively, *Simia polycomus* Schreber and *Simia ferruginea* Shaw. The former became (by subsequent designation) the genotype of *Colobus*. The latter (*Simia badius*) is here designated the genotype of Rochebrune's genus *Piliocolobus* (1866), as I fail to find a previous designation of a genotype for this genus.

—*J. A. Allen.*

RECENT LITERATURE

Grinnell, Joseph, and others. California Ground Squirrels. A Bulletin dealing with Life Histories, Habits and Control of the Ground Squirrels in California. Monthly Bull. California State Comm. Horticulture, vol. 7, nos. 11 and 12, November-December, 1918, pp. 595-807, or separate pp. 1–203. January 27, 1919.

This bulletin was put forth to serve as a "manual for the use of county horticultural commissioners and systematic workers," and constitutes "a veritable textbook, through the aid of which it is now possible for the agricultural teacher throughout the public schools to place the subject clearly and concisely before the young patriots who are aiding so largely in the work of extermination."

Its scope will be indicated by the list of articles included: Natural history of the ground squirrels of California, by J. Grinnell and J. Dixon; The Columbian Ground Squirrel, by W. T. Shaw; A history of ground squirrel control in California, by W. C. Jacobsen; A study of fumigation methods for killing ground squirrels, by John S. Burd and G. R. Stewart; The Rodent Control Division, by S. V. Christierson and C. A. Wilkins; and Rodent Eradication work of the Biological Survey in California, by F. E. Garlough. Formulas for destroying rodents are given in the appendix.

The ground squirrels dealt with by Grinnell and Dixon include eighteen forms occurring in California belonging to three genera as follows: *Citellus*, twelve species or subspecies; *Callospermophilus*, three; *Ammospermophilus*, three. Shaw's paper pertains to the chief rodent pest occurring in eastern Washington and portions of neighboring states, the Columbian ground squirrel (*Citellus colum-*

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[5] In 1895, in a paper on the names of mammals given by Kerr (Bull. Amer. Mus. Nat. Hist., vii, pp. 179–192), I called attention (l. c., p. 186) to the availability of Kerr's name *badius* over Shaw's *Simia ferruginea*.